

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US02/41181

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H01L 21/44, 21/48, 21/50, 21/331, 21/30, 21/46  
US CL : 438/109, 118, 367, 459, 612, 977

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
U.S. : 438/109, 118, 367, 459, 612, 977, FOR 367, FOR 485, FOR 426; 257/686, 276, 621

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
EAST: handle!, wafer, stack\$

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3,462,650A (HENNINGS et al) 19 August 1969 (19.08.1969), see entire document.	1-4 and 8
A	US 4,982,266 A (CHATTERJEE) 01 January 1991 (01.01.1991), see entire document.	1-4 and 8
A	US 4,939,568 A (KATO et al) 03 July 1990 (03.07.1990), see entire document.	1-4 and 8
A	US 5,814,889 A (GAUL) 29 September 1998 (29.09.1998), see entire document.	1-4 and 8
A	US 6,114,768 A (GAUL et al) 05 September 2000 (05.09.2000), see entire document.	1-4 and 8
A	US 5,229,647 A (GNADINGER) 20 July 1993 (20.07.1993), see entire document.	1-4 and 8
A	US 5,426,072 A (FINNILA) 20 June 1995 (20.06.1995), see entire document.	1-4 and 8
A	US 5,424,245 A (GURTNER et al) 13 June 1995 (13.06.1995), see entire document.	1-4 and 8
A	US 5,786,238 A (PAI et al) 28 June 1998 (28.06.1998), see entire document.	1-4 and 8

Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

24 April 2003 (24.04.2003)

Date of mailing of the international search report

20 MAY 2003

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## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,889,832 A (CHATTERJEE) 26 December 1989 (26.12.1989), see entire document.	1-4 and 8
A	US 5,268,326 A (LESK et al) 07 December 1993 (07.12.1993), see entire document.	1-4 and 8
A	US 6,489,217 B1 (KALNITSKY et al) 03 December 2002 (03.12.2002), see entire document.	1-4 and 8
A	US 5,091,331 A (DELGADO et al) 25 February 1992 (25.02.1992), see entire document.	1-4 and 8
A	US 5,627,106 A (HSU) 06 May 1997 (06.05.1997), see entire document.	1-4 and 8
A	US 6,444,560 B1 (POGGE et al) 03 September 2002 (03.09.2002), see entire document.	1-4 and 8
A	JP 62-117316 A (SHARP CORP.) 28 May 1987 (28.05.1987), see entire document.	1-4 and 8